NOVEMBER/DECEMBER 2024

# FEL31/CEL41/BEL41 — SEMICONDUCTOR DEVICES AND IC FABRICATION TECHNOLOGY

Time : Three hours Maximum : 75 marks

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SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is the Relation between $\beta$ and $\alpha$?
2. What are the characteristics of Phototransistor?
3. What are the advantages of MOSFET?
4. Why D MOSFET is commonly known as normally on MOSFET?
5. What is the function of TRIAC?
6. State any two characteristics of TRIAC.
7. State the working principles of photo diode.
8. Mention the merits of CCD.
9. What is MSI?
10. What is VLSL?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Enumerate the transistor connections.

Or

(b) Explain the working principles of phototransistor.

12. (a) Explain the working of E type MOSFET.

Or

(b) Outline the Parameters of FET.

13. (a) Explain the applications of UJT and SCR.

Or

(b) Illustrate the characteristics of TRIAC.

14. (a) Write a note on solar cell.

Or

(b) What are semiconductor LASER diode? Explain its applications.

15. (a) Differentiate between thin and thick film technology.

Or

(b) Explain MSI and LSI thin film technology.



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SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain with neat diagram the working of transistor as an oscillator.

17. Discuss about the parameters of FET.

18. Explain the SCR as a switch.

19. Explain the working of LDR.

20. Explain the fabrication of resistors.

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